Special Issue

Proceedings of the 10th International Conference on Fundamental Aspects, Processes and Applications of Pyrolysis, Hamburg, Germany, September 28–October 2, 1992

Preface
W. Kaminsky xi

Publisher's note xiii

Editorial: A change in scope
H.-R. Schulten and R.P. Lattimer xv

Analytical and Instrumental Analysis

Pyrolysis–gas chromatography for end group analysis of polystyrene macromonomers using stepwise pyrolysis combined with on-line methylation
H. Ohtani, S. Ueda, Y. Tsukahara (Nagoya, Japan), C. Watanabe (Koriyama, Japan) and S. Tsuge (Nagoya, Japan) 1

Polymer degradation modified by blending with polymers chosen on the basis of their Φ-factors
P. Gardner, R. Lehrle and D. Turner (Birmingham, UK) 11

Polyaromatization in common synthetic polymers at elevated temperatures
M. Blazsó (Budapest, Hungary) 25

Electrothermal vaporization and pyrolysis of materials for environmental analysis
A. Golloch, M. Haveresch-Kock (Duisburg, Germany) and W.G. Fischer (Bonn, Germany) 37

Assessment of Scotch whisky quality by pyrolysis–mass spectrometry and the subsequent correlation of quality with the oak wood cask
K.J.G. Reid, J.S. Swan (Edinburgh, UK) and C.S. Gutteridge (Reading, UK) 49

Experimental polysaccharide chars and their "fingerprints" in charred archaeological food residues
I. Pastorova, T.F.M. Oudemans and J.J. Boon (Amsterdam, The Netherlands) 63

Application of pyrolysis–gas chromatography and pyrolysis–gas chromatography/mass spectrometry to the unmasking of amber forgeries
A.M. Shedrinsky (Brooklyn, NY, USA), D.A. Grimaldi (New York, NY, USA), J.J. Boon (Amsterdam, The Netherlands) and N.S. Baer (New York, NY, USA) 77

Pyrolysis in Geochemistry, Biological Science, Tobacco Research

Analytical pyrolysis of humic substances and soils: geochemical, agricultural and ecological consequences
H.-R. Schulten (Wiesbaden, Germany) 97

Dynamics of soil organic matter studied by pyrolysis–field ionization mass spectrometry
P. Leinweber (Vechta, Germany) and H.-R. Schulten (Wiesbaden, Germany) 123

The effect of various chemical treatments on the pyrolytic pattern of peat humic acid
G. Almendros (Madrid, Spain), F. Martin, F.J. González-Vila and J.C. del Río (Seville, Spain) 137

Structural characterization of lignin polymers by temperature-resolved in-source pyrolysis–mass spectrometry and Curie-point pyrolysis–gas chromatography/mass spectrometry
E.R.E. van der Hage, M.M. Mulder and J.J. Boon (Amsterdam, The Netherlands) 149

The effect of cations on the thermal decomposition of lignins
E. Jakab (Budapest, Hungary), O. Faix (Hamburg, Germany), F. Till and T. Székely (Budapest, Hungary) 185

Nitrobenzene oxidation vs. pyrolysis–gas chromatography/mass spectrometry as a means to determine lignin composition
J.B. Reeves III (Beltsville, MD, USA) and G.C. Galletti (Gallina, Italy) 195
Quantification of lignin and carbohydrates in kraft pulps using analytical pyrolysis and multivariate data analysis
M. Kleen, G. Lindblad and S. Backa (Stockholm, Sweden) 209
Flash pyrolysis of coal sub-structures. A mechanistic and kinetic evaluation
J.V. Christiansen, A. Feldthus, H. Egsgaard, P. Bo and L. Carlsen (Roskilde, Denmark) . 229
Studies of the yield of sulphur from a coal sample by pyrolysis–gas chromatography
P. Almén, I. Ericsson and P. Selsbo (Lund, Sweden) 243
Cell wall development in maize somatic embryos studied by pyrolysis–mass spectrometry
M.M. Mulder (Amsterdam, The Netherlands) and A.M.C. Emons (Wageningen, The Netherlands) 255
The application of pyrolysis–mass spectrometry to microbial ecology: rapid characterisation of bacteria isolated from an estuarine environment
R.J. Heyler, S.J. Bale and R.C.W. Berkeley (Bristol, UK) 265
Degradation kinetics of tobacco — survey by fast thermogravimetry analysis
B.-H. Müller (Hamburg, Germany) 273

Technical Pyrolysis

Pyrolysis of "Fusen"
O. Kock, W. Kaminsky and H. Sinn (Hamburg, Germany) 285
Fluid bed pyrolysis of anhydride-hardened epoxy resins and polyether–polyurethane by the Hamburg process
N. Grittner, W. Kaminsky and G. Obst (Hamburg, Germany) 293
The VEBA OEL Technologie pyrolysis
H.P. Wenning (Gelsenkirchen, Germany) 301
Preparation of cyanuric and isocyanic acids in a fluidized bed reactor
V.V. Dragalov, S.V. Karachinsky, O.Y. Peshkova and V.P. Kirpichev (Moscow, Russian Federation) 311
Temperature-programmed pyrolysis–mass spectrometry (TPP–MS) and pyrolysis–gas chromatography/mass spectrometry (Py–GC/MS) — practical applications to industrial problems
S.A.J. Mundy (London, UK) 317
Polycyclic aromatic hydrocarbons in polystyrene derived pyrolysis oil
P.T. Williams, P.A. Horne and D.T. Taylor (Leeds, UK) 325

Pyrolysis for Biomass Conversion

Analytical pyrolysis and semicontinuous catalytic hydropyrolysis of Organocell lignin
D. Meier, J. Berns, C. Grünwald and O. Faix (Hamburg, Germany) 335
Characterisation of rosin-based commercial resins by pyrolysis– and simultaneous pyrolysis methylation–gas chromatography/mass spectrometry techniques
J.M. Challinor (East Perth, W.A., Australia) 349

Mechanisms and Kinetics of Pyrolysis Reactions

Mechanistic aspects of ionic reactions in flames
H. Egsgaard and L. Carlsen (Roskilde, Denmark) 361
Pyrolysis mechanisms of *O*-(2-hydroxyethyl)celluloses
P.W. Arisz and J.J. Boon (Amsterdam, The Netherlands) 371
A three-dimensional model for determination of kinetic data from the pyrolysis of beech wood
F. Bonnefoy, P. Gilot and G. Prado (Mulhouse, France) 387
Modelling of the decomposition of methane at 1273 K in a plug flow reactor at low conversion
O. Olsvik (Trondheim, Norway) and F. Billaud (Nancy, France) 395

Effect of cross-linking on the pyrolysis of diphenylalkanes
P.F. Britt, A.C. Buchanan III, E.A. Malcolm and C.A. Biggs (Oak Ridge, TN, USA) 407

Information for Authors 419

Author Index 425

Subject Index 427